

## SPECIFICATIONS

- As built weight calculations to be supplied with bid showing proposed vehicle, front axle, rear axle, and total weight.
- Electrical load calculations showing power draw for all installed 120/240VAC and 12VDC systems to be supplied with bid.
- HVAC calculation showing proper heating and cooling based on occupants, equipment, square footage, vehicle construction, windows, doors etc.
- Overall length of apparatus, including rear step and mast: 40ft Max.
- Overall height of apparatus (loaded): 12ft 6inch Max.
- Interior walkway height: 6ft 8inch Min.

### CHASSIS:

2015 Freightliner MT-55 or approved equal, forward control chassis. 26,000-lb GVWR  
Air Ride Suspension Hydraulic Brakes  
Cummins ISB 6.7 260HP Engine or approved equal, - Allison 2200 EVS Transmission or approved equal,

- Allison 2200 EVS automatic transmission or approved equal, with park pawl with PTO provision
- Water to oil transmission cooler
- 10,000# single front axle
- Front oil seals
- Synthetic 75w-90 front axle lube
- TRW TAS-65 power steering
- 10,000# taperleaf front suspension
- Front shock absorbers
- Front stabilizer bar
- 17,500# Single rear axle
- 5.13 rear axle ratio
- Synthetic 75w-90w axles lube
- Rear oil seals
- Airliner or approved equal, 18,000# rear suspension
- Manual dump valve for air suspension with indicator light, without gauge
- Dual instant response rear suspension leveling valves
- Rear sway bar
- Rear shock absorbers
- Bosch or approved equal, hydraulic brake package
- Wabco or approved equal, hydraulic 4S/4M without traction control

- 60 gal / 227 liter rectangular steel fuel tank - between rails
- Length of auxiliary pickup tubes (generators, furnaces etc.) shall prevent these devices from using more than 75% of vehicle's fuel tank capacity.
- Michelin XZE 255/70R22.5 16ply front radial tires or approved equal
- Michelin XDE M/S 255/70R22.5 16ply rear radial tires or approved equal
- 22.5x8.25 10-hub pilot aluminum front wheels
- 22.5x8.25 alum outside; Accuride 10-hub pilot inside rear wheels
- Polished front wheels (outside only) with 'half moon' bright wheel covers
- Polished rear wheels (outside of outer wheels only), with bright wheel covers
- Hood mounted chromed plastic grille
- Dual electric horns
- Sanden or approved equal, compact air conditioner compressor
- Auto self-reset circuit breakers and fuses
- TRW tilt/3.00" telescopic steering column with foot actuated pedal
- Driver message center w/LCD display, 24 warning lamps, data linked, AMI
- Electronic mph speedometer with secondary kph scale, without odometer
- Electric engine coolant temp gauge w/warning lamp and alarm
- Digital voltage display integral with driver display
- Automatic transmission oil temp gauge w/warning lamp
- Engine hour meter, integral to message center LCD
- Intake mounted air restriction indicator with graduations
- 97 db backup alarm
- Cruise control switches
- Programmable RPM ctrl w/low voltage auto high idle & RPM ctrl switches
- Wagner 7212 turn signal flasher
- Three (3)-year/50,000 mile chassis warranty.
- Two (2)-year/unlimited miles engine warranty.
- Five (5)-year/unlimited miles transmission warranty.

Block heater operated through multiplex touch screen and be powered by shorepower or generator.

DOT triangle reflector kit with three (3) triangles

Jump start kit with I/O gauge jumper cables and receptacle mounted in the bumper area on the front of the truck.

Horizontal exhaust on streetside.

#### BODY:

- All aluminum step van body.
- Driver sedan door with slider window, door skin shall be chemically bonded to door frame structure. Door shall have continuous stainless steel piano hinge and two (2) nylon straps.
- Passenger sedan door with slider window, door skin shall be chemically bonded to door frame structure. Door shall have continuous stainless steel piano hinge and two (2) nylon straps.
- Sedan doors shall have a 0.125" aluminum tread plate step well for 18" skirt depth.
- Sedan doors shall have black non-skid tape on all door entry sills.
- Sedan doors shall have polished aluminum Tri-mark flush mounted locking hardware with self-aligning rotary latch and matching key locks. Outside door handles not to exceed

50" from ground.

- Aluminum one piece extruded 6005-T5 alloy 3" x 3" wall beams on 24" centers, 0.125" wall thickness. Studs feature machined wire pass-throughs, and raised adhesive control features on base.
- Beams shall be chemically bonded to sidewalls eliminating the need for rivets. Buck-rivets will be used to fasten the top and bottom rub rail. Use of two-sided tape is not acceptable.
- Body shall have 0.125" strain-hardened aluminum alloy 5052-H36 side panels. The upper panels shall be free of rivets allowing for smooth graphics application.
- Fender flares, 1.38" x 2.25" x 0.090" roll formed and radiused 5052-H32 aluminum sheet, mechanically fastened to wheel opening. Edges sealed against moisture.
- NFPA 1901 embossed 0.125" aluminum tread plate roof attached to 3" x 3" extruded aluminum roof bows on 16" centers. Bows shall be 2" skip welded every 12". Tread plate seams to be continuous welded. Perimeter of roof shall be chemically sealed.
- Lift-up molded fiberglass hood with non-corrosive grill insert. Hood shall have integrated headlamps and turn signal indicators and dual assist gas charged lift shocks. The use of mechanical assist springs is not acceptable.
- Extruded aluminum floor with interlocking planks, 1.88" high x various widths, 0.125" top surface. 6005-T5 alloy and temper. Heavy-duty thick-wall extruded planks fore and aft of all floor cutouts and every 5th plank in all other areas. Planks made of 6005-t5 alloy and temper, 0.250" thick top surface.
- Bright polished front bumper.
- Tinted safety plate glass windshield chemically bonded to body with driver and passenger sun visors.
- Full width 12" deep heavy-duty one piece aluminum rear bumper with center step, painted to match the body.
- Integral cab air conditioning and heating system with dash controls.
- Velvac heated remote control rear view mirrors with dash controls. Upper mirror has 62-sq.in. of flat surface and lower mirror has 30-sq.in. of convex surface. Mirror has a fold-away arm.
- Driver seat shall be Seats Inc. Magnum 200 mechanical suspension seat on fixed pedestal. Seat shall be covered in black cloth and have arm rests, lumbar support, tilted back and 3-point seat belt.
- Passenger seat shall be Seats Inc. Magnum 200 mechanical suspension seat on fixed pedestal. Seat shall be covered in black cloth and have arm rests, lumbar support, tilted back and 3-point seat belt.
- Intermittent windshield wiper/washer with single heavy-duty windshield wiper motor.

- Rear frame-mounted tow eyes extending past body.
- Aluminum engine box cover with acoustical and thermal insulation. Black molded ABS composite engine box over-lay.
- Acoustical and thermal insulation with heat shield on exterior fire-wall.
- Full length skirting. Skirt shall extend 18" down from the bottom of floor extrusions.
- Dash shall be vacuum formed ABS composite with integrated control pod located left of dash.
- All clearance and side marker lights to be LED.
- Standard structural warranty of 5 years or 50,000 miles and standard component warranty of 12 months or 12,000 miles.
- The vehicle shall be fully sanded on all exterior surfaces with no more than 150 grit to assure removal of imperfections in metal surface. All aluminum shall be chemically etched and primed prior to painting. Base body color shall be oven baked and painted to commercial truck standards.

32" wide x 82" high 0.125" aluminum sedan door with 21.5" wide x 25.5" high fixed window and mini-blind. Door shall have continuous stainless steel piano hinge, two (2) nylon door straps, aluminum drip rail, and exterior door holder.

Heavy-duty fluted aluminum grab handle with rubber inserts and chrome plated stanchions installed at each exterior entry door location.

Custom fabricated interior stainless steel handrail for rear entry door.

Automatic LED courtesy lights at all entry doors.

Courtesy light defeat feature on front and rear touch screens.

Front manually operated exterior entrance step.

Rear manually operated exterior entrance step

12Vdc keyless entry system independent of the standard key lock. Includes the following:

- Exterior weatherproof programmable numeric keypad.
- Interior numeric keypad.
- Interior push button, request to exit, switch.
- 12Vdc actuated dead bolt lock. If power is turned off the dead bolt will go to the unlocked position and the door must be locked and unlocked with the standard key lock.

Super bright LED stop/tail, turn and reverse lights.

Entire underside of the apparatus shall be undercoated. Includes chassis, floor extrusions, step wells and aluminum compartments.

Rear rubber mud flaps with anti-sail brackets.

#### PAINT AND GRAPHICS :

Body paint colors shall be determined during pre-construction meeting.

Reflective stripe on the exterior sides and rear of the vehicle, placed up to 48" above ground level. Color to be determined during pre-construction meeting.

4-inch wide Chevron pattern conspicuity stripes on the exterior back of the vehicle. Color to be determined during pre-construction meeting.

Custom computer-generated vinyl graphics wording to match existing department vehicles.

Custom computer-generated vinyl graphics shields to match existing department vehicles.

#### DRIVER/PASSENGER CAB AREA:

- Cover cab doors with one piece aluminum panels. Upper half to be wrapped with vinyl and lower half to be wrapped with padded vinyl.
- 10" high 0.100" bright aluminum tread plate kick plate at bottom of doors.
- Heavy-duty rubber grab handle on each door.
- Panels covered with vinyl above driver and passenger doors.
- Vehicle height sign on dash.
- Insulated black rubber mat in driver and passenger toe plate area. Insulate walls in toe plate area and install carpeted panels.
- Vehicle shall have a Final Stage Vehicle Certification and Altered Vehicle Certification as required by Federal Motor Vehicle Safety Standards (FMVSS) 49 CFR Part 567.5 and 567.7
- Payload sticker in cab area with vehicle axle load ratings and available axle payload as built.

Work area on passenger side of cab shall be custom shaped and wrap around to extend by drivers area and be constructed of 5/8" plywood covered to match rear counter-tops and trimmed with vinyl T-molding.

Overhead console with lockable storage doors shall be installed above driver and passenger area. The entire console shall be constructed of 3/4" plywood. The face shall be finished with black laminate and the bottom shall be covered with padded vinyl.

Red LED/Clear incandescent dome light with 3-position switch, red/off/white mounted under center of console.

Pioneer DEH-P4800MP or approved equal, MOSFET 50-watt x 4, CD/MP3/WMA/WAV Receiver with 3-band parametric EQ or approved equal, and one (1) pair of Pioneer TS-A6971R or approved equal, 6" x 9" three-way speakers mounted in cab.

Zone Defense color back up camera system with 7" LCD monitor with day/night camera or approved equal.

ABS recessed cup holders for driver and passenger.

#### WALLS, CEILING AND FLOOR:

Insulate walls with a minimum 3" of fiberglass insulation. Cover interior body side posts with 1/2" plywood sub wall,

Cover each sub wall with silver smooth finish Kemlite 0.075" fiberglass reinforced plastic (FRP) lining. No seams from cab to rear of truck.

Insulate ceiling with a minimum of 3" of fiberglass insulation. Cover interior roof beams with three (3) piece modular panel ceiling. Panels to be made with 1/2" structural plywood, Exposure 1-APA, 5 ply, face veneer plugged and sanded. Meets California Air Resources Board (CARB) phase 2 requirements. Modular ceiling panels to be covered with Silver Haze fabric. Center section from front of truck to rear of truck shall be laid over the side panels and be removable for future upgrades.

5/8" exterior grade tongue & groove plywood with a water proof moisture barrier underlayment for floor.

Lonseal Loncoin II Flecks 150 Onyx or approved equal, non-skid commercial grade PVC flooring. The flooring shall be continuous, one piece full length, full width, no seams.

2-1/2" vinyl cove molding where walls meet floor.

Hinged step well cover on passenger side.

30" pocket doors to separate each room and cab area. Cover pocket doors with silver smooth FRP and cap all sides with anodized extruded aluminum. All screws shall be stainless steel. Pocket doors shall be installed on heavy-duty aluminum tracks with two (2) four-wheel roller trucks. Pocket door shall have recessed handles and a key lock. All bulkheads shall be covered with Kemlite 0.075" silver smooth FRP. Cap all sides with anodized extruded aluminum. All screws shall be stainless steel. Cover load space doors with black powder coated aluminum panel and heavy-duty rubber grab handle.

#### GALLEY/LAVATORY :

Norcold model DE0751BB or approved equal, 12 / 24 VDC / 120VAC refrigerator with the following features:

- 2.7 cu. ft. capacity.
- Freezer shelf for ice cube tray.
- Two door bins; lower bin holds 2-liter containers.
- Integrated door latch.

Incinolet model WB 240 stainless steel electric toilet system or approved equal, with PRV override circuit. Includes:

- 200 paper filters.
- One (1) 20A/240Vac receptacle for power connection.
- Ducting to the exterior of the vehicle.
- Trash can and chrome plated toilet paper holder.
- Return air vent.
- Sign reading: NOTICE: Ceiling vent fan is automatically disabled when Incinolet is in operation.

Wastebasket w/hold down bracket located in restroom.

Purell or approved equal, wall mount hand sanitizer with 4 packs of solution.

Bobrick B-165 (or current model) 18" x 24" one-piece channel frame mirror with bright polished finish and mitered corners.

#### SEATING:

Space Air Grid office chairs 5560 black or approved equal, with armrests, five caster spider base, and adjustable height. Strap installed under counters to secure chair for travel. Fabricate and install fixed bench seating with removable cushions. Bench seat cushions shall be covered in heavy-duty vinyl.

Install seat belts for fixed bench seating on driver side of truck. Seat belts shall come with pull test documentation.

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Fabricate and install flip-down bench seating on passenger side of truck. Bench seat cushions shall be covered in heavy-duty vinyl. Bottom seat cushion will be installed on Zico Quic-Seat or approved equal, fold down spring loaded seat brackets and covered with heavy-duty vinyl.

#### BENCH SEAT REQUIREMENTS:

- Foam for seat backs and bottoms shall be firm density
- All bench seating material must meet Federal Motor Vehicle Safety Standards part 571.302 Flammability of Interior Materials.
- Material corners shall be squared or angled to fit precise cut of foam.
- Foam shall be bonded to plywood backer with industrial grade adhesive.

- Double stapling of fabric/vinyl to backer with industrial grade upholstery staples.

#### CABINETS:

All proposed cabinets shall be custom fabricated aluminum and built for the exact space it will be installed in. Cabinet specifications:

- Base cabinets to be constructed of 0.080" powder coated aluminum with anodized aluminum frames.
- Base cabinet doors shall be double shell, formed from a single sheet of 0.080" aluminum, with a 0.040" aluminum door back attached.
- Overhead cabinets constructed of 0.064" powder coated aluminum with anodized aluminum frames.
- Overhead cabinet doors are double shell, formed from a single sheet of 0.064" aluminum, with a 0.040" aluminum door back attached.
- Overhead cabinet doors swing up on a full-length aluminum hinge.
- Overhead cabinet to have one adjustable shelf per door (24" high and taller cabinets only) - locked in place to your selected height. Shelves are formed from a single sheet of 0.064" mill finish aluminum, with 1 1/8" hemmed edges.

Radius edging on all cabinets shall be powder coated.

Dry erase writing surfaces on overhead cabinet doors.

Gas shock lift supports on overhead cabinet doors.

LED strip lights shall be installed below all overhead cabinets and shall include a rocker switch for on/off operation.

All countertops shall be covered in 0.040" Wilsonart laminate or approved equal. All exposed edges shall be covered with heavy duty flexible PVC T-molding.

Conference table covered in 0.040" Wilsonart laminate. All exposed edges shall be covered with heavy duty flexible PVC T-molding.

Powder coated aluminum conference table base with built-in receptacles and network jacks.

A flip up conference table leaf shall be installed to double the size of the conference table.

Custom black powder coated aluminum plates and hardware used to mount two department supplied radio chargers.

Two black powder coated box pan aluminum shelves for equipment closet.

Custom fabricated anodized aluminum framed dry erase marker board with pin strips shall be installed to cover all open wall areas in conference room. Frames shall be hinged and held closed with tension clips.

Grip-A-Strip paper / map holders shall be installed above all dry erase boards. One shall be located on the exterior below the awning.

Computer cable pass-thru grommets in Conference table.

Wall mounted dry erase marker caddy kits for each dry erase board.

#### HVAC SYSTEM:

Fan-tastic Vent model 4000 R or approved equal, 3-speed reversible 12" power roof

ventilator.

Fan-tastic roof vent rain cover.

Three (3) Ducted Coleman Polar Mach 9200 series or approved equal, low profile air conditioners.

- 13,500 nominal BTU air conditioner with condensate pump.
- Chill Grille Assembly or approved equal, with 5,600 BTU heat strip
- High Capacity Air Duct manufactured from polystyrene foam laminated with 99% pure polished aluminum inside and out, internally mounted in ceiling
- Louvered Ceiling Vents
- Each air-conditioner shall be zoned and temp set from any of the touch screens which shall read current room temp and set temp.

Three (3) Broan model 174 or approved equal, wall mount 5,120 Btu/hr electric heaters. Each heater shall be zoned and temp set from any of the touch screens which shall read current room temp and set temp. Front room, rear room, and cab.

Broan model 112 kick space mount 5,120 Btu/hr electric heater near center restroom area. Heater shall be zoned and temp set from any of the touch screens which shall read current room temp and set temp.

#### 120/240VAC ELECTRICAL SYSTEM:

Power Tech 25-kW 120/240Vac or approved equal, liquid-cooled diesel generator with air bag mounts installed in a custom fabricated compartment. Generator features:

- USTC Certified Manufacturer
- 3 year/2000 hour Warranty with nationwide service network
- Four point air bag mounting system
- Four-cycle water cooled diesel engine
- Radiator cooled, direct mounted
- High-coolant temp and low oil pressure shutdown sensors
- Spin-on fuel and oil filter
- Single side service
- Typical Gallon Per Hour fuel consumption: 25% load = 0.51, 50% load = 1.01, 100% load = 2.03

Compartment shall be constructed to the following specifications:

- 0.187" aluminum with all welded seams.
- 2" deep 0.125" aluminum box pan doors and 0.125" aluminum frames.
- Door frames riveted to the body and welded to the compartments.
- Stainless steel door hinges attached with stainless steel machine screws.
- Flush mounted door handles with slam latches.
- 0.125" perforated aluminum panels on interior door surfaces.
- Gas charged lift/support cylinders to hold doors open at 90° .
- Industrial grade neoprene gasket door seals.
- Sound barrier lining on interior compartment walls, ceiling and doors. Sound barrier material consists of metalized mylar facing, 1" sound absorbing foam, 1.0#/sf barrier, 1/4" foam decoupler and a 3 mil. acrylic pressure sensitive adhesive with a 76# kraft paper liner.

AC Data AC2060 or approved equal, Whole House Surge Suppressors protection for entire AC power system.

- UL US listed: UL1449 3rd Edition



- NEMA 4 plastic enclosure: 5.14"(H) x 4.00"(W) x 2.45"(D)
- LED Visual verification of status

A multiplex controlled power and data electronics system must be incorporated into a common touch screen with the ability to distribute and control strategic on board systems. It also simultaneously allows distribution of the information to multiple onboard control/monitoring stations. This system is required as it simplifies start up procedures, contains fewer operating components, reduces operational start-up time, reduces the total amount of wiring in the vehicle and has error detection protocols and troubleshooting features.

Multiplex system features:

- Two (2), 10" LCD touch screens with custom graphics for control and monitoring at separate control stations in the front and rear of the truck
- Touch pads with custom graphics for local control of HVAC and lighting in center rooms and exterior as applicable.
- Mobile device (tablet) integrated to multiplex electronics system.
- AC power distribution control and monitoring for the generator with power management
- DC power distribution control and monitoring with I/O channels and three battery banks
- Manual or automatic generator control
- HVAC temperature control in each section of the truck and on front and rear LCD touch screens
- Lighting control Day/Night mode in each section of truck and on front and rear LCD touch screens. Note: Each zone shall have three 3 modes. 1 - red/night mode, 2 - white, 3 - reduced white.
- Automatic power transfer switches
- Automated startup and shutdown procedures which allow all operators to get all systems operational in the same order every time in less than 10 minutes
- Seamless control of generators, lighting, awnings and additional devices
- Mast control
- Safety interlocks will not allow vehicle to start when exterior equipment is deployed up, out, or down
- System shall identify wrong AC voltage plugged into vehicle and stop power from leaving system and reaching equipment
- The system must be completely upgradeable with power modules located throughout vehicle. Additional components may be added to system with a simple software modification

System capability is not to be achieved with use of multiple monitoring systems designed for specific use i.e. water monitors, battery monitors etc.

Marinco 50A-125/250Vac waterproof shore power inlet, 50-ft. 50A-125/250Vac shore power cord and 6-ft. 50A-125/250Vac pigtail.

Fourteen (14) specification grade 20A-125Vac duplex receptacles not dedicated to any installed equipment.

Four (4) specification grade 20A-125Vac exterior GFCI duplex receptacle with weatherproof PVC cover.

Wire chase wire management large capacity double raceway connecting all work stations.

### 120/240VAC WIRING REQUIREMENTS:

- All 120/240Vac main wiring shall be stranded THHN wire and run in non-metallic Carlon Carflex or approved equal, liquid tight conduit.
- All electrical circuits and appliances shall conform to applicable national electrical codes.

### 12VDC ELECTRICAL SYSTEM:

- Four (4) 6Vdc Absorbed Glass Mat (AGM) or approved equal, batteries. Batteries shall be installed underbody in slide out weather resistant compartment. Two (2) batteries will be separated for auxiliary equipment and two (2) batteries will be for communications equipment.
- Two (2) electronic converter/chargers, 80 amp minimum output each.

Converter/charger features:

- Charges three banks of batteries at the same time.
  - UL listed for safety.
  - Manual reset circuit breaker.
  - Reverse battery protection.
  - Electronic current limiting.
  - High voltage protection.
- All DC electrical and metering switched and monitored through the multiplex system. When the generator is started or the shorepower is plugged in the battery chargers shall turn on automatically.

Thin-Lite model 616 18" white 12Vdc or approved equal, fluorescent light fixtures in all areas.

Thin-Lite model 616 18" red 12Vdc or approved equal, fluorescent light fixtures in all areas.

Whelen 600 Series 12 diode Opti-Scenelight 6SC0ENZR or approved equal, surface mounted on each rear side of truck.

Whelen 810 Series white quartz halogen scene light with 8-32° optics, model number 810CA0ZR or approved equal, spaced evenly on each side of truck.

15A-12Vdc power outlets at each work station and in conference table base.

Streamlight PolyStinger or approved equal, Flashlight w/AC/DC - holder Color ~ Yellow

Whelen 295HFSA5 or approved equal, siren with 9 low current lighting control switches.

Whelen SA315P or approved equal, high performance speaker, with bracket.

### 12VDC EMERGENCY LIGHTING:

Whelen L31HGF or approved equal, green LED command beacon mounted on antenna raceway.

Whelen Freedom Series LED light bar or approved equal, mounted on custom fabricated 0.125" aluminum bracket that is painted to match body. Includes:

- 1 - 9LLTH72 Custom 72" length
- 1 - FX795 Pre-wire for GTT 795H Opticom Emitter
- 1 - 795H GTT 795H Opticom Emitter
- 3 - FLDRR 400 Series Linear LED Flashers (Red)
- 1 - FXALF LR11 Super LED Alley Lights w/15 Degree horz adj.
- 1 - FXTLS1 LR11 Super LED Takedown Lights w/15 Degree horz adj.
- 1 - FLDSCL Drivers Side Cable

Whelen TAM65 Low Profile Traffic Advisor with six TIR6 Super-LED lamps or

approved equal.

Two (2) Whelen TIR3 series or approved equal, Super-LED lighthouse with internal flasher, red LED's with clear outer lens and chrome flange.

Six (6) Whelen 600 series or approved equal, Linear Super-LED lighthouse with internal flasher, red LED's with clear outer lens and chrome flange.

Two (2) Whelen 600 series or approved equal, Linear Super-LED lighthouse with internal flasher, 1/2 red, 1/2 amber LED's with clear outer lens and chrome flange.

Four (4) Whelen 900 series or approved equal, Linear Super-LED lighthouse with internal flasher, red LED's with clear outer lens and chrome flange.

#### 12VDC WIRING REQUIREMENTS:

- 2-gauge minimum copper stranded battery cable shall be used for 12Vdc main supply lines. All cable runs shall be full length, no splices. All cable terminals shall be staked and soldered. All cable shall be enclosed in convoluted polyethylene tubing and the ends of the cable shall be sealed with color-coded shrink-wrap identifying the function of the cable.
- All added electrical circuits shall be protected from over-current by resettable circuit breakers appropriately rated for the load. Only circuit breakers shall be used in the installation of added electrical wiring (plug type fuses are unacceptable).
- Circuit breaker functions shall be identified by engraved or printed labels.
- All added wiring for load runs shall be AWG 8, 10, 12, 14 and 18 and must conform to MIL-W-16878F.
- Wire terminals for added circuits must conform to MIL-T-7928. Terminals shall be insulated, insulation grip, TYPE II, CLASS 2 and shall be crimped with tooling recommended by the terminal manufacturer.
- All wiring shall be numbered or lettered on 6" centers minimum.
- Wiring shall be protected from chafing and abrasion with convoluted polyethylene tubing (wire loom) as required.
- Where wire passes through sheet metal, bulkheads and structural supports, plastic grommets shall be used to protect both wiring and wire looms.
- All wire bundles shall be tied with trimmed nylon ties.
- Extreme care shall be exercised to provide for easy serviceability of the system in future years.
- Extreme care must be taken in the installation to avoid the engine manifold, engine exhaust, and muffler, which could expose the wiring to severe overheating during long periods of operation. Proper insulation and heat deflection panels must be installed in such areas.
- A high-current 12Vdc system wiring schematic shall be provided.
- These are the minimum acceptable 12Vdc wiring requirements.

#### AUDIO/VIDEO:

Two (2) ViewSonic VT3255LED - 32" Class LED-backlit LCD TV/Monitor or approved equal, with wall mount bracket.

- HD-grade 1680(H) x 1050(V) pixel resolution
- Component , Composite , HDMI , S-Video
- VGA (HD-15)
- Hidden bottom speakers
- TV Tuner, NTSC
- Dimensions: 29.6"(W) x 19.1"(H) x 2.3"(D)

Inputs on this display; Local TV, DSS, DVR, Conference room Rack PC

Blu-ray disc player, Sony BDP-S5100 or approved equal

EverFocus or approved equal, 4 Channel 1TB DVR, Built-in DVD Burner, 2 Internal HDDs, 1TB ECR264-4X1/1T

- 4 Inputs / 1 Output
- H.264 compression format for efficient disk utilization and network bandwidth conservation
- Real time recording and playback rate for all cameras
- Built-in recording time calculator for fast recording estimation
- Built-in DVD burner
- Graphical User Interface Menu Configuration

Inputs:

- Exterior audio/video input
- Mast camera

Winegard Mission RT4000S or approved equal, stationary satellite TV system with dual LNB.

- Fully automatic satellite acquisition.
- Low-profile 12.9" high dome x 20" Diameter

DirecTV D11 or approved equal, DSS receiver. UL and FCC approved.

Middle Atlantic rack mount kits or approved equal, (custom fitted for, DVD players, DVD recorders, and DSS receivers).

Exterior audio/video input (RCA audio jack, BNC video jack).

King Control, JACK Digital HDTV Antenna with SureLock™ DTV Signal Meter or approved equal.

- Static roof mount
- No Crank Handle
- Full 360° Rotation
- Built-in Amplifier

Modulated audio/video system to enable any audio/video source (i.e. camera, VCR, DVD player, DSS receiver) and up to four local off-air channels to be viewed on designated TV channels.

HE Series 12 position Passive Combiners

All RF cable for DSS antenna systems (when specified) shall be Belden #9116 series 6 broadband coaxial cable. All other video cabling shall be Belden #1505A RG-59/U precision video cable.

#### MAST AND MAST MOUNTED EQUIPMENT:

Will-Burt or approved equal, 52-ft. heavy-duty non-locking telescoping pneumatic mast.

Mast features:

- 100 lb. payload capacity (including Nycoil)
- 52' extended height
- 8' 4" nested height

Includes:

- Airmaster Control with airline filter, lubricator, regulator, control valve and dump valve.
- 80' of 3/4" Nycoil conduit and weather-tight fittings.
- Will-Burt external mount shelf bracket and external mount support bracket.
- Interlock to prevent vehicle from being driven with mast raised.

Modify rear bumper as required to mount mast as low as possible.

Gas 3/4-hp compressor with remote mount 3 gallon air tank mounted in separate exterior compartment.

All welded custom fabricated 0.125" aluminum triangle shaped antenna bracket mounted on mast. Bracket shall be formed from welded C channel with supports running from each corner to center support.

- Three (3) Maxrad or approved equal, antenna bases
- LMR 240 antenna cable.
- Custom fabricated 0.125" aluminum Nycoil cylinder painted to match body color. No nycoil shall be visible when mast is in cradled position.
- 70' of 3/4" Nycoil conduit and weather-tight fittings.
- Antenna Base, Rain Cap Bright Chrome

Custom fabricated 0.125" aluminum cover shall be installed to cover mast tube from bumper to nycoil cylinder and painted to match body color.

Mast lookup light mounted on camera bracket.

Weatherproof mast up/down control switch on exterior of vehicle.

COHU 3960HD HDTV/H.264 or approved equal, Hi-speed positioning system, HDTV 720p30 camera with 30x optical zoom.

- 120vac operating power
- Electronic image stabilization
- Anti-fog features and ip67 housing with heater and faceplate wiper
- Pole mount bracket

Wedge shaped diamond plate brush guard welded to roof to protect mast camera and antennas.

### RADIOS:

Primary 12Vdc power leads for communications radios shall be minimum 2-gauge copper stranded wire with soldered crimp-on end connectors (gauge based on radio requirements). Cables shall be enclosed in convoluted tubing and function identified with colored shrink-wrap. Power to radios shall be controlled by a continuous-duty switch actuated by touch screen control panels.

Prewire and make installation provisions for communications radio in cab and conference area.

- NMO-style base on the roof or antenna raceway, as applicable.
- LMR195 antenna cable routed to radio transceiver location in Carlon Carflex or approved equal, ENT conduit.

- 12Vdc power routed to radio transceiver location.

Install Firecom 5000D series or approved equal, digital intercom system. Located at each workstation

- 5300D, digital intercom
- MR-cable
- HM-10 headset module
- Cable 6c flat
- Hanger hook for each headset

Install ten (10) department supplied communications radios. These radios shall be tied to Firecom 5000D or approved equal, headsets. Installation includes:

- NMO-style base on the roof or antenna raceway, as applicable.
- LMR195 antenna cable routed to radio transceiver location in Carlon Carflex ENT conduit.
- 12Vdc power routed to radio transceiver location.

Install department supplied Zetron paging console.

Install department supplied TCB Interoperability system.

Install six (6) department supplied communications radios. These radios shall be tied to the TCB Interoperability system.

Bidder to supply custom cables to TCB.

Radio antenna patch panel for up to twenty (20) radios. Includes:

- TNC bulkhead jack in patch panel for each radio antenna on the raceway.
- TNC bulkhead jack in patch panel from each radio location.
- Antenna leads from radio locations to patch panel routed through Carlon Carflex ENT conduit.
- 21" patch cords terminated with TNC connectors.

Install hinged panels under countertops to conceal radio transceivers where applicable.

Panels to match wall color material.

Fabricate and install 3" x 3" square extruded aluminum tubing antenna raceway on the roof of the vehicle. Antenna raceway will penetrate the roof at antenna patch panel location and be welded to roof. The raceway shall be totally enclosed and waterproof.

- 3" high x 3" long aluminum access covers at each antenna base location on the side of the tubing for access to antenna base and coax cable.
- Access covers with watertight gasket and attached with four (4) stainless steel machine screws. Raceway tube to have nut-serts installed for access cover attachment.

Install two (2) department supplied radio rack chargers.

#### TELEPHONE SYSTEM:

Four (4) Land Line inputs.

Seven (7) Telephone extension jacks.

Cast Products EB00013-1 or approved equal, cast aluminum weatherproof box with key lock for land line input connections.

Paint exterior input box door to match body.

Install an aluminum shroud with weatherproof pass-through open/close hatch on the landline input box and paint to match body.

66-style punch-down block.

Panasonic KX-TA824 or approved equal, Electronic Modular Switching System.

Panasonic KX-TA82483 or approved equal, Expansion Card.

Panasonic KX-TA82481 or approved equal, Expansion Card.

Five (5) Panasonic KX-T7730-B or approved equal, black twelve-line speakerphone telephone with 16-digit alphanumeric LCD display.

Two (2) Panasonic KX-TD7896 or approved equal, Black Cordless Phone.

Four (4) fixed wireless terminals with Maxrad low profile antenna.

Cellular provider to be determined during pre-construction meeting.

Two (2) manual switches to select wireless or landline (C.O.) service for HNT Device.

All telephone lines and cellular antenna cable shall be installed in Carlon Flex-Plus ENT conduit or raceway (as applicable).

#### COMPUTER NETWORK AND EQUIPMENT:

Fourteen (14) RJ-45 CAT6 computer network jacks with CAT6 cable routed through Carlon Flex-Plus or approved equal, ENT conduit or raceway (as applicable). Locations to be determined during pre-construction meeting.

Leviton 69270-U48 or approved equal, 48-port Cat6 rack mount patch panel.

Allied Telesyn AT-GS950/24-10 or approved equal, 24-port 10/100/1000T Unmanaged Gigabit Switch.

- Wirespeed performance
- Auto-negotiation Gigabit ports
- Auto MDI/MDIX on TX ports
- Transparent to VLAN packets
- Full duplex flow control

Fourteen (14) Certified 18" CAT6 patch cord.

One (1) Certified 36" CAT6 patch cord.

Cable Certification Report confirming that network wiring complies with CAT6 specifications.

Install two (2) ViewSonic VT1901LED - 19" LED-backlit LCD monitor (or current model) with wall mount at each work station.

Three (3) Dell KB212-B USB 104 Quiet Key Keyboards or approved equal.

Four (4) Dell MS111 USB 3-Button Optical Mouse or approved equal.

Dell KM632 Wireless Keyboard or approved equal

Non-skid matting for all keyboard and mouse.

Seven (7) ATEN Technology CE800B or approved equal, multimedia console extender.

- Extend keyboard, mouse, monitor, USB mass storage device and speaker/mike audio
- Supports video up to 1600x1200 @ 60Hz
- Provides for local and remote console connections
- 3 year manufacturer warranty

Three (3) IOGEAR GVE120 CAT-5 VGA or approved equal, Video Extender

- Supports video up to 1600x1200 @ 60Hz
- Provides for local and remote video connections
- 3 year manufacturer warranty

Three (3) IOGEAR GCS22U or approved equal, 2 port USB KVM switch

- Built in cables
- Remote switch button keeps the desktop clear of cables
- USB keyboard and mouse support
- Powered from USB bus so no external power supply is required
- 3 year manufacturer warranty

Seven (7) USB extender from rack mounted computers.

HP Officejet Pro 8600 Premier All-in-One Printer or approved equal

- Color printing, color copying, color scanning, color faxing, black-and-white printing, black-and-white copying, black-and-white scanning, black-and-white faxing
- Ethernet, WiFi 802.11b/g, 802.11b/g Wireless Technology

Allowance for seven computers at a cost of \$2,000.00 per unit.

Rack mount all PC's.

Rack mount department supplied server.

CradlePoint ARC MBR1400 Series with Integrated 3G/4G (Verizon) wireless cellular modem or approved equal. Provides wired Ethernet and 3G/4G wireless WAN connectivity.

Install antennas required for CradlePoint. Installation includes:

- Antennas
- NMO-style bases in the antenna raceway.
- LMR195 antenna cables routed to radio transceiver location in Carlon Carflex ENT conduit.

Make installation provisions for department installed Satellite broadband system.

Includes:

- Roof mounted weather proof junction box.
- Additional roof support structure as required.

#### MISCELLANEOUS ELECTRONICS:

Napco Gemini alarm system or approved equal. System includes magnetic contacts on all entry doors, exterior compartment doors, battery box doors, generator compartment doors and hood. Two (2) key fobs, key pad, 360° ceiling mounted motion sensors in each room, siren and bell.

One (1) fixed wireless terminal will be interfaced to the alarm system to call a pre-set phone number automatically if the alarm system is triggered. Terminal must be connected to a constant hot power source.



Columbia Weather Systems Magellan™ weather station or approved equal, wall mounted LCD touch screen display.

- All-In-One Sensor Transmitter housed in a Self-Aspirating Radiation Shield
- Temperature Sensor
- Relative Humidity Sensor
- Digital Barometer
- Relative humidity probe.
- Ultrasonic Wind Direction & Speed Sensor with mounting adapter
- Electronics flux-gate Compass

Weather Master Software: Graphical weather monitoring software for Windows operating environment; displays, reports, and records current weather conditions. Reading's data logged in Access® database for future analysis and inclusion with other Windows-based programs. Internet capable, alarm notification program, and multi-station viewing features. Also includes Cameo/Aloha Interface and North-orientation offset programs.

- Touch Screen LCD Color Display Console
- Displays real-time weather readings on four viewing screens
- Displays Daily Max/Min Data
- ROM Corp Kwik Raze Bottom Raise Pole with Sensor permanently mounted on top. Pole has quick release handle that enables the pole to be raised approximately 24" above the roof line.

Garmin DEZL 560 LMT or approved equal, advanced navigator for the trucking industry.

- 5-inch display
- Preloaded City Navigator NT for North America or Europe (full coverage)
- Lifetime maps and traffic (indicated by "LMT" after model number on the box)
- FM traffic receiver with 12/24 volt power cable
- Portable friction mount
- micro-USB cable
- Preloaded National Truck and Trailer Services (NTTS) Breakdown Directory

Garmin DEZL 560 LMT or approved equal, Suction cup mount with (2) pack Adhesive Disk. Mounts to windshield or dash.

Two (2) Franklin Instruments clocks or approved equal, with 2.5" LED display and 12 hour or 24 hour modes.

Middle Atlantic MRK-4026 or approved equal, forty-space 19" wide x 26.5" depth (24" useable depth) open framed electronics equipment racks with caster base. Rack can easily slide out from its fixed position with quick release fasteners to allow side access to rack equipment. Install as many racks as required to house all electronics and ensure proper airflow to keep equipment from overheating.

Middle Atlantic MW-4QFT-FC top fan panel or approved equal, with four (4) 50 cfm ventilation fans, QFAN all areas requiring airflow.

All doors to have proper venting.

18-outlet power strips with 2 front-panel C19 outlets and 12 rear-panel C13 outlets. Install quantity required to power all installed electronics.

#### EXTERIOR STORAGE COMPARTMENTS:

Single door underbody storage compartment with interior dimensions of 15" high x 36" wide x 25" deep constructed from 0.125" aluminum with all welded seams and flip down door.

Single door underbody storage compartment with interior dimensions of 15" high x 60" wide x 25" deep constructed from 0.125" aluminum with all welded seams and flip down door.

Compartments will be constructed to the following specifications:

- Sweep out type bottoms with 1/2" drain holes.
- 2" box pan doors and door frames fabricated from 0.125" aluminum.
- Door frames shall be riveted to the body and welded to the compartments.
- Compartments shall have a LED light that illuminates when the door is opened.
- Dri-Dek mat on compartment bottom.

Compartment doors will be constructed to the following specifications:

- Stainless steel hinges attached with stainless machine screws.
- Slam latches and flush mounted handles.
- 0.100" bright polished aluminum diamond plate on interior surfaces fastened with stainless hardware.
- Each door shall hold 800 pounds when open in shelf position.
- All doors shall be sealed with industrial grade neoprene gasket.

#### AWNING:

Dometic Weather Pro Awning 18' electric awning or approved equal. Color to be determined.

- Automatically retracts when truck ignition is turned on.
- Solid-state sensor automatically closes awning after detecting sustained winds
- Exclusive Knee-Action Design prevents damage from sudden wind gusts
- Heavy duty motor fully contained in the roller tube, self-locks awning in travel position
- Unique spring-arm mechanism automatically dumps accumulating rain water

#### ROOF ACCESS:

Zico Quic-Ladder swing out and down vehicle ladder, RL-2-7 or approved equal.

- Cast aluminum rungs with flat, non-skid surface
- Steps are 3" deep x 15-1/2" wide
- Handrails are 1-1/4" heavy-walled aluminum tubing

1.25" Diameter welded aluminum tube brush guard installed on street side and curb side of roof to protect all roof mounted equipment and antennas from tree branch damage.

#### LEVELING SYSTEM:

Automatic leveling system, Quadra MFG. Inc. Big Foot™ model QE-2 four point fully automatic one-touch leveling system or approved equal. Includes:

- 24" jack with 18" stroke (4 total) 17,000-lb. capacity
- Air ride dump valve
- Fully automatic control panel with manual feature
- Safety interlock when jacks are deployed
- Independent leg leveling.

High density polypropylene, injection molded yellow colored Super Dolly Pads for use with leveling system jacks. Pads measure 15" x 17" x 1" thick with a grab strap on one side.

#### MISCELLANEOUS ITEMS:

Two (2) 5 pound dry chemical fire extinguishers or approved equal.

Two (2) First Alert 9-volt combination Carbon Monoxide and Smoke alarms or approved equal.

### MANUALS:

Custom operational manual for training vehicle operators on all aspects of proper storage, start-up procedures, and shut down procedures. Supply on paper and CD.

Complete manual set on paper and CD, including the following:

- As-built specifications with interior and exterior drawings as used for production of the vehicle.
- Chassis and body owner's manuals.
- 12Vdc and 120Vac legends showing wire gauge, color, number and function.
- 12Vdc high current wiring diagram illustrating the battery systems, isolators, power converters, and alternator.
- Roof top antenna placement drawing and legend identifying antenna placements and termination points.
- Audio/Video cabling diagram.
- Telephone system punch block wiring diagrams.
- Warranty and Return Authorization procedures.
- Battery maintenance information.
- All individual component manuals and warranty registration cards as provided by component manufacturers.

### MISCELLANEOUS:

At time of delivery to Delaware County a manufacturer representative shall provide eight (8) hours of training and inspection:

- Automatic start-up and shut down procedures.
- Manual start-up and shut down procedures.
- Proper storage